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In the Claims

Please replace the claims pending in the application with the following set of claims submitted hereinafter as a "Clean Version":

What is claimed is:

D<sup>1</sup>  
15. A method for increasing the bearing capacity of foundation soils for built structures comprising: providing a plurality of holes spaced from each other deep in the foundation soil; injecting into the foundation soil, through said holes, a substance which expands as a consequence of a chemical reaction; producing compaction of the foundation soil contiguous to the injection zone due to the expansion of said substance injected into the soil; constantly monitoring level variations of the soil and/or built structures overlying the injection zone to detect the moment when the built structures and/or the soil surface, overlying said injection zone, begins to raise which is the moment in which the compaction of the soil has reached levels generally higher than a required minimum value at which the soil lying below and around said injection zone withstands and rejects dynamic and static weights exerted thereon by said built structures and by overlying and adjacent soil masses, and wherein the expansion of the injected substance is very fast with a potential increase in volume of the expanded substance being at least five times the volume of the substance before expansion.

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16. A method according to claim 15, wherein the injecting step is repeated at different depth levels for producing compaction of the masses or layers of treated soil.

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17. A method according to claim 16, wherein said different depth levels are spaced by approximately 1 m from each other, at each level a greater bearing capacity than the required minimum value being obtainable.

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18. A method according to claim 15, wherein said monitoring step is performed with a laser level apparatus.

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5/ 19. A method according to claim 18, wherein said holes are provided vertically, the injection steps being performed continuously along rising columns wherein tree-like shapes are formed with a very irregular configuration with protrusions, bumps and projections of considerable size produced by different resistance to compaction of the soil, and by the presence of interstices or fractures in the soil.

6/ 20. A method according to claim 19, wherein an entire thickness of the soil layers which are compressible or have low bearing capacity is treated so as to perform consolidation up to the solid horizon of the layers having a sufficient bearing capacity regardless of the depth at which the solid horizon is located.

7/ 21. A method according to claim 20, wherein the expandable substance is selected from substances adapted to produce immediate expansion.

8/ 22. A method according to claim 21, wherein the expandable substance comprises a mixture of two components, the first being a polyether polyol and/or a polyester polyol, a catalyst and water, and the second being the isocyanate MDI.

9/ 23. A method according to claim 22, wherein the distance between two adjacent holes is between 0.5 m and 3 m.

10/ 24. A method according to claim 23, wherein said holes are provided at an angle with respect to the vertical.

11/ 25. A method according to claim 24, wherein the injection step comprises several active injection phases alternated with suitable pauses.

12/ 26. A method according to claim 25, wherein the injection substance is heated just before the injection step.

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13/ 27. A method according to claim ~~22~~<sup>28</sup>, wherein the water content is of 3.44%, by weight.

14/ 28. A method according to claim ~~25~~<sup>11</sup>, wherein in the injection step, tubes are used through which the expandable substance is injected into the soil, the tubes having an inner diameter of about 10 mm.

15/ 29. The method of claim ~~28~~<sup>2</sup>, wherein the built structures include any of: buildings, roadway slabs, airport runways, and equipment supporting slabs.

17/ 30. A method for increasing the bearing capacity of foundation soils for built structures comprising:

- providing a plurality of holes spaced from each other deep in the foundation soil;
- providing an expandable substance with very fast expansion time and with a potential increase in volume of the expanded substance being at least five times the volume of the substance before expansion;
- injecting into the soil, through said holes, said substance which expands as a consequence of a chemical reaction, the injection being performed continuously along rising columns;
- producing compaction of the soil contiguous to each substance injection zone due to expansion of said substance injected into the foundation soil which forms, along said columns, tree-like shapes with irregular configuration including protrusions, bumps and projections produced by different resistance to compaction of the foundation soil and due to voids, interstices or fractures present under said structure and into the foundation soil; and
- constantly monitoring level variations of the soil surface and/or built structure overlying the injection zone to detect a moment when the built structure and/or the soil surface, overlying said injection zone, begins to raise which is the moment when the

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compaction of the soil has reached levels generally higher than a required minimum value at which the soil lying below and around said injection zone withstands and rejects dynamic and static weights exerted thereon by said built structures and by overlying and adjacent soil masses.

118 31. The method of claim 30, wherein said holes are provided in the foundation soil to have a direction selected to be any of a vertical direction and a direction forming an angle with respect to the vertical direction.

119 32. The method of claim 31, wherein the built structures include any of: buildings, roadway slabs, airport runways, and equipment supporting slabs.

33. A method for increasing the bearing capacity of foundation soils for built structures comprising:

- providing a plurality of holes spaced from each other deep in the foundation soil;
- providing an expandable substance with very fast expansion time;
- injecting into the soil, through said holes, said substance which expands as a consequence of a chemical reaction;
- producing compaction of the soil contiguous to the substance injection zone through expansion of said substance injected into the foundation soil until the soil compaction reaches levels which are generally higher than a minimum compaction value required to provide a bearing capacity of the foundation soil suitable to withstand any dynamic and static weight exerted thereon by the built structures and by overlying and adjacent soil masses; and
- determining attainment of said minimum compaction value required by constantly monitoring level variations of the soil surface and/or of the built structure overlying said injection zone to detect a moment when the built structure and/or the soil surface, overlying said injection zone, begins to raise, which is the moment when the soil lying below and around said injection zone withstands and rejects upwardly the dynamic and

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static weight exerted thereon ~~by~~ said built structures and overlying and adjacent soil masses.

D<sup>1</sup> 24/ 20/ 34. The method of claim ~~33~~, wherein the built structures include any of: buildings, roadway slabs, airport runways, and equipment supporting slabs.

D<sup>2</sup> 16/ 6/ 35. A method according to claim ~~28~~, wherein the expandable substance is a substance comprising a mixture of polyols and an isocyanate MDI.

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Version with the markings to show the changes made

15. (Twice Amended) A method for increasing the bearing capacity of foundation soils for built structures comprising: providing a plurality of holes spaced from each other deep in the foundation soil; injecting into the foundation soil, through said holes, a substance which expands as a consequence of a chemical reaction; producing compaction of the foundation soil contiguous to the injection zone due to the expansion of said substance injected into the soil; constantly monitoring [the] level variations of the soil and/or built structures overlying the injection zone to detect the moment when the built structures and/or the soil surface, overlying said injection zone, begins to raise which is the moment in which the compaction of the soil has reached levels generally higher than a required minimum value at which the soil lying below and around said injection zone withstands and rejects dynamic and static weights exerted thereon by said built structures and by overlying and adjacent soil masses, and wherein the expansion of the injected substance is very fast with a potential increase in volume of the expanded substance being at least five times the volume of the substance before expansion.

21.(Amended) A method according to claim 20, wherein the expandable substance is selected from substances adapted to produce immediate expansion[, such as a substance comprising a mixture of polyols and an isocyanate MDI].

35. (New) A method according to claim 20, wherein the expandable substance is a substance comprising a mixture of polyols and an isocyanate MDI.